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10/042,091	01/08/2002	Andrew Darrow	ORT-1568	7455

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EXAMINER

MOORE, WILLIAM W

ART UNIT

PAPER NUMBER

1652

DATE MAILED: 07/10/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/042,091

Applicant(s)

DARROW ET AL.

Examiner

William W. Moore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 15 and 16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Preliminary Amendment

Applicant's Amendment A, Paper No. 6 filed January 8, 2002, has been entered, providing a statement at page 1, line 1, of the specification, canceling claims 1-14 and 17-27 and relating the instant application to its parent application serial No. 09/387,375, which has since issued as U.S. Patent No. 6,485,957, made of record herewith.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 15 and 16 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Claim 15 recites the generic, and ambiguous, term "protease EOS protein activity", thus claims 15 and 16 are construed according to the definitional statements at page 7 of the specification to embrace methods utilizing variant proteases which are "functional derivatives" of the native EOS protease having either the amino acid sequence of the native EOS protease set forth in SEQ ID NO:7 or the amino acid sequence of the zymogen fusion with the EOS protease catalytic domain set forth in SEQ ID NO:9. There is no evidence, however, in the specification that at the time the application was filed Applicant possessed a variant protease other than the zymogen fusion with the EOS protease catalytic domain set forth in SEQ ID NO:9 wherein the amino acid sequence diverges from that of SEQ ID NO:7. In particular, the zymogen fusion protease having the amino acid sequence of SEQ ID NO:8 is an artificial product, a fusion polypeptide of heterologous domains, thus must comprise the amino acid sequence of the native EOS catalytic domain. It is agreed that Applicant and others can replace, e.g., the native signal

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peptide of a human EOS protease, with a different signal peptide region, as Applicant introduces an alternative signal peptide, a polyhistidine tag, and an alternative propeptide region in preparing a baculovirus vector expression construct. Yet neither the claims nor the specification describe any differences that may occur nor where they might be in the catalytic domain of the disclosed serine protease EOS and the specification does not otherwise disclose or suggest the nature or source of any of the generic proteins meeting the definitional statement of the specification with which the claims must be construed. “While one does not need to have carried out one’s invention before filing a patent application, one does need to be able to describe that invention with particularity” to satisfy the description requirement of the first paragraph of 35 U.S.C. §112. *Fiers v. Revel v. Sugano*, 25 USPQ2d 1601, 1605 (Fed. Cir. 1993). There is nothing in the specification to show that Applicant had determined, or had even contemplated, which positions among the carboxyl-proximal 260 amino acids of the EOS protease might be altered, nor the nature of any amino acid substitution, nor any deletion of amino acids to generate the myriad species of “functional derivative[s]” that would be utilized in methods embraced by claims 15 and 16.

In addressing the issue of whether a disclosure of a molecular structure of one polypeptide of one biological species could adequately describe the molecular structure of a functionally similar molecule of another biological species, the Court of Appeals for the Federal Circuit held that a claimed invention must be described with such “relevant identifying characteristic[s]” that the public could know that the inventor possessed the invention at the time an application for patent was filed, rather than by a mere “result that one might achieve if one had made that invention”. *University of California v. Eli Lilly*, 119 F.3d 1559, 1568, 43 USPQ2d 1398, 1406 (Fed. Cir. 1997). Nothing at the time the specification was filed demonstrates that Applicant was “able to envision” enough

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of the structure of a undisclosed, generic, protease to provide the public with identifying "characteristics [that] sufficiently distinguish it . . . from other materials". *Fiers*, 25 USPQ2d at 1604 (citing *Amgen, Inc. v. Chugai Pharmaceutical Co.*, 18 USPQ2d 1016, 1021 (Fed. Cir. 1991)). The specification's treatment of the claimed subject matter is considered to be entirely prospective where skilled artisans in the relevant field of molecular biology could not predict the structure, or other properties, of the generic "protease EOS protein[s]" used in methods of claims 15 and 16.

Claims 15 and 16 are rejected under 35 U.S.C. §112, first paragraph, because the specification, while being enabling for a method of identifying compounds that modulate the activity of the human protease EOS having the amino acid sequence set forth in either SEQ ID NO:7 or SEQ ID NO:9, comprising combining a candidate compound with a human protease EOS comprising the catalytic domain of the amino acid sequences set forth in either SEQ ID NO:7 or SEQ ID NO:9 and a labeled substrate and measuring a change in the amount of the labeled substrate,

does not reasonably provide enablement for any and all method of identifying compounds that modulate the activity of "functional derivatives" of the human protease EOS. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Claim 15 recites the generic, and ambiguous, term "protease EOS protein activity", thus claims 15 and 16 are construed according to the definitional statements at page 7 of the specification to embrace methods utilizing variant proteases which are "functional derivatives" of the native EOS protease having either the amino acid sequence of the native EOS protease set forth in SEQ ID NO:7 or the amino acid sequence of the zymogen fusion with the EOS protease catalytic domain set forth in SEQ ID NO:9. Claims 15 and 16 are rejected because claim 15, from which claim 16 depends, does not require that an EOS protease has the amino acid sequence set forth in either of SEQ IDs NOs:7 or 9 or that the contacting or combining step is practiced with the catalytic domain of the EOS protein, present in both of SEQ IDs NOs:7 and 9. The specification defines a "functional derivative" of a polypeptide, at page 6, as a molecule having a biological activity "substantially similar to" that of a disclosed polypeptide but Applicant enables only

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two proteases that clearly have proteolytic activity. One has the amino acid sequence of the native human protease EOS, SEQ ID NO:7, and the other has the amino acid sequence of a very specific derivative of the native human protease EOS, SEQ ID NO:9. The amino acid sequence of SEQ ID NO:9 includes minor alterations of the amino-proximal region - or catalytic domain - of the mature protease EOS due to incorporation of the corresponding region of the protease EOS cDNA in Applicants' expression vector to specify the PFEK-protease EOS-6XHIS product. The specification teaches no other alterations of the protease EOS catalytic domain, and it is not clear that it teaches modifications of the propeptide of protease EOS, or of the precursor protease EOS, that permit an alternate recitation to that of SEQ IDs NOs:7 and 9.

It is agreed that the specification discloses a specific modification of the amino acid sequence of SEQ ID NO:7, replacement of its signal peptide region with an heterologous signal peptide, that a skilled artisan would readily be able to duplicate by selecting an alternate signal peptide. Yet the scope of the subject matter of a method for detecting modulatory compounds with an EOS protease that constitutes a "functional derivative" other than SEQ ID NO:7 or a functional derivative of SEQ ID NO:9, is not enabled where it reaches arbitrary assignments of any or all of amino acid substitutions, additions or deletions in any number of amino acid positions in SEQ ID NO:7 or in SEQ ID NO:9, that would alter the primary structure of a human protease EOS in ways undisclosed in the specification. Neither the prior art made of record herewith nor Applicant's specification identifies other amino acids in the proteolytic domains of, e.g., the closely related prior art prostatic and β -tryptase proteases that might be altered, nor teaches the nature of alterations that may be made, which would permit resulting variants to function as serine proteases. Mere sequence perturbation cannot enable design and preparation of divergent polypeptides and provide the public with undisclosed, generic, "protease EOS protein[s]".

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It is well settled that 35 U.S.C. §112, first paragraph, requires that a disclosure be sufficiently enabling to allow one of skill in the art to practice the invention as claimed without undue experimentation and that unpredictability in an attempt to practice a claimed invention is a significant factor supporting a rejection under 35 U.S.C. §112, first paragraph, for non-enablement. See, *In re Wands*, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988) (recognizing and applying the "Forman" factors). Cf., *Ex parte Forman*, 230 USPQ 546, 547 (Bd. Pat. App. & Int. 1986) (citing eight factors relevant to analysis of enablement). The standard set by the CCPA, the predecessor of the present Court of Appeals for the Federal Circuit, is not to "make and screen" any and all possible alterations because a reasonable correlation must exist between the scope of guidance provided by the specification and the scope asserted in the claimed subject matter. *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 25 (CCPA 1970) (scope of enablement varies inversely with the degree of unpredictability of factors involved in physiological activity of small peptide hormone); see also, *Ex parte Maizel*, 27 USPQ2d 1662, 1665 (Bd. Pat. App. & Int. 1992) (functional equivalency of divergent gene products not supported by disclosure only of a single B-cell growth factor allele). The standard set by the CCPA was approved by the Federal Circuit in *Genentech, Inc. v. Novo-Nordisk A/S*, 42 USPQ2d 1001 (Fed. Cir. 1997). Applying the "Forman" factors discussed in *Wands, supra*, to Applicant's disclosure, it is apparent that:

- a) the specification lacks adequate, specific, guidance for altering the amino acid sequence of native human protease EOS other than preparation of SEQ ID NO:9,
- b) the specification lacks working examples wherein the catalytic domain of the human protease EOS is further altered,
- c) in view of the prior art publications of record herein, the state of the art and level of skill in the art do not support random and arbitrary alterations, and,
- d) unpredictability exists in the art where catalytic domains of members of the class of proteases represented by the amino acid sequences of the EOS proteases having amino acid sequences of SEQ IDs NOs:7 and 9 herein have not yet been specifically modified.

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Thus the scope of the claimed subject matter of methods of claims 15 and 16, where claim 15 recites the generic term "protease EOS protein", cannot be considered to be supported by the present specification, even when taken in combination with the teachings available in the prior art. Limitation of the subject matters as indicated in the statement at page 7 above is required in order to overcome this rejection.

The following is a quotation of the second paragraph of 35 U.S.C. §112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15 and 16 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 is indefinite in reciting "protease EOS protein activity" because the specification discloses that the human protease EOS is a protease, i.e., that it cleaves peptide bonds, but the claim is ambiguous in adding "protein", opening the claim to an interpretation that some other function, not disclosed in the specification, is intended. Claim 16 is included in this rejection because it fails to resolve the ambiguity of claim 15 from which it depends.

Claim Rejections - 35 USC §103

The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. §103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. §103(c) and potential 35 U.S.C. §§102(e), (f) or (g) prior art under 35 U.S.C. §103(a).

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Claims 15 and 16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Davies et al., 1996, *The Journal of Biological Chemistry*, Vol. 273, pages 23004-23011, and Egelrud et al., U.S. Patent No. 5,834,290, both made of record with Applicant's Information Disclosure Statement.

The ambiguous claim limitation "protease EOS protein activity" permits claims 15 and 16 to embrace methods of identifying modulators of many prior art chymotrypsin-related proteases having structural similarity to the serine protease EOS. In the absence of a disclosure of a native substrate for the protease EOS, a prior art protease that will function as a serine protease is a "functional derivative" of the protease EOS. Available as prior art under 35 U.S.C. §102(a), Davies et al. teach, Figure 3B at page 23007, the amino acid sequence of the mammalian BSP2 protease expressed in the brain, as well as its encoding nucleic acid sequence, and having a 258-amino acid catalytic domain which shares greater than 45% identity with the catalytic domain of SEQ ID NO:7 herein, and nearly 45% identity with the catalytic domain of SEQ ID NO:9 herein, constituting a functional derivative of the protease EOS because it will function as a protease. Egelrud et al. teach, cols. 24-26, 30-32, and 48, the use of a newly-discovered, recombinantly-produced, and medically-important mammalian serine protease, SCCE, in methods for the identification of compounds capable of modulating the catalytic activity of the serine protease, specifically, enhancing or inhibiting its catalytic activity, col. 24 at lines 16-26, wherein a method utilizes labeled, chromogenic, i.e., colormetric, substrates, particularly the S-2586 substrate, available from Boehringer and having their designation SEQ ID NO:15, and a similar chromogenic substrate having their designation SEQ ID NO:11. Egelrud et al. teach, col. 32, that they were better able to differentiate the activity of the new serine protease from known serine proteases, such as cathepsin G and chymotrypsin, by using the different chromogenic substrates.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to recombinantly express the new serine protease BSP2 taught by Davies et al.

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and to assay its catalytic activity utilizing several chromogenic substrates in order to identify compounds capable of modulating its activity, and in particular inhibiting its activity, according to the teachings of Egelrud et al. This is because Davies et al. consider the new serine protease BSP2 to be of medical importance since it is expressed in the mammalian brain and because Egelrud et al. teach that the activity of a new, medically important, serine protease can be differentiated from the activities of other known, medically important, mammalian serine proteases by using several different chromogenic substrates.

Claims 15 and 16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Wood et al., WO 99/14328, made of record herewith, and Egelrud et al., U.S. Patent No. 5,834,290, both made of record with Applicant's Information Disclosure Statement.

The ambiguous claim limitation "protease EOS protein activity" permits claims 15 and 16 to embrace methods of identifying modulators of many prior art chymotrypsin-related proteases having structural similarity to the serine protease EOS. In the absence of a disclosure of a native substrate for the protease EOS, a prior art protease that will function as a serine protease is a "functional derivative" of the protease EOS. Available as prior art under 35 U.S.C. §102(a), Wood et al. teach, pages 29, 49-50, and 79, and Figures 97 and 98, of a polynucleotide, SEQ ID NO:262, having a nucleic acid sequence encoding the 317-amino acid sequence of the human protease PRO343, SEQ ID NO:263, as well as, pages 92-97, 149 and 158-165, expression vectors comprising the polynucleotide and host cells transformed with the vectors utilized in methods for the recombinant production of the PRO343 protease. Because the amino acid sequence of the PRO343 protease shares an overall 41% identity to SEQ ID NO:7 herein and the amino acid sequence of the catalytic domain of the protease PRO343 shares greater than 45% identity with the catalytic domain of SEQ ID NO:7 herein, and shares nearly 45% identity with the catalytic domain of SEQ ID NO:9 it constitutes a functional derivative of the protease EOS because it will function as a serine protease. Egelrud et al. teach, cols. 24-

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26, 30-32, and 48, the use of a newly-discovered, recombinantly-produced, and medically-important human serine protease, SCCE, in methods for the identification of compounds capable of modulating the catalytic activity of the serine protease, specifically, enhancing or inhibiting its catalytic activity, col. 24 at lines 16-26, wherein a method utilizes labeled, chromogenic, i.e., colormetric, substrates, particularly the S-2586 substrate, available from Boehringer and having their designation SEQ ID NO:15, and a similar chromogenic substrate having their designation SEQ ID NO:11. Egelrud et al. teach, col. 32, that they were better able to differentiate the activity of the new serine protease from known serine proteases, such as cathepsin G and chymotrypsin, by using the different chromogenic substrates.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to recombinantly express the new human serine protease PRO343 taught by Wood et al. and to assay its catalytic activity utilizing several chromogenic substrates in order to identify compounds capable of modulating its activity, and in particular inhibiting its activity, according to teachings of Egelrud et al. This is because Wood et al. consider their new human serine protease PRO343 to be of medical importance and because Egelrud et al. teach that the activity of a new, medically important, human serine protease can be differentiated from the activities of other known, medically important, human serine proteases by using several different chromogenic substrates.

Claims 15 and 16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Antalis et al., WO 98/36054, made of record herewith, and Egelrud et al., U.S. Patent No. 5,834,290, both made of record with Applicant's Information Disclosure Statement.

The ambiguous claim limitation "protease EOS protein activity" permits claims 15 and 16 to embrace methods of identifying modulators of many prior art chymotrypsin-related proteases having structural similarity to the serine protease EOS. In the absence of a disclosure of a native substrate for the protease EOS, a prior art protease that will function

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as a serine protease is a "functional derivative" of the protease EOS. Available as prior art under 35 U.S.C. §102(b), Antalis et al. teach, SEQ IDs NOs:28 and 30, and pages 18, 38-39, 43-44, 46-47, and 52-53, of polynucleotides encoding the amino acid sequences of two human proteases related to a canonic testisin protease - SP003LA in Figure 20C and SP001LA in Figure 20A - having amino acid sequences of 297 and 271 amino acids sharing, respectively, 41% and 39% sequence identity with SEQ ID NO:7 herein, and expression vectors comprising the polynucleotide and host cells transformed with the vectors, and recombinant methods of making testisin and disclosed testisin-related polypeptides. Because the catalytic domains of the SP003LA and SP001LA proteases have amino acid sequences that share, respectively, greater than 49% and 47% identity with the catalytic domain of SEQ ID NO:7 herein, they are considered to be functional derivatives of the protease EOS where both will function as serine proteases. Egelrud et al. teach, cols. 24-26, 30-32, and 48, the use of a newly-discovered, recombinantly-produced, and medically-important human serine protease, SCCE, in methods for the identification of compounds capable of modulating the catalytic activity of the serine protease, specifically, enhancing or inhibiting its catalytic activity, col. 24 at lines 16-26, wherein a method utilizes labeled, chromogenic, i.e., colormetric, substrates, particularly the S-2586 substrate, available from Boehringer and having their designation SEQ ID NO:15, and a similar chromogenic substrate having their designation SEQ ID NO:11. Egelrud et al. teach, col. 32, that they were better able to differentiate the activity of the new serine protease from known serine proteases, such as cathepsin G and chymotrypsin, by using the different chromogenic substrates.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to recombinantly express both of the new human serine proteases SP003LA and SP001LA taught by Davies et al. and to assay the catalytic activities of both utilizing

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several chromogenic substrates in order to identify compounds capable of modulating their proteolytic activities, and in particular inhibiting these activities, according to the teachings of Egelrud et al. This is because Davies et al. consider the new human serine proteases SP003LA and SP001LA to be of medical importance and because Egelrud et al. teach that the activity of a new, medically important, human serine protease can be differentiated from the activities of other known, medically important, human serine proteases by using several different chromogenic substrates.

Conclusion

While not available as prior art, the publications of Ni et al., US Patent Application Publication 2002/0094955 and WO 01/24815, as well as the publication of Xiao, WO 01/98466, are made of record herewith as pertinent to Applicant's Disclosure. Ni et al. disclose a nucleic acid sequence, SEQ ID NO:2, encoding a prostatic-like serine protease, SEQ ID NO:4, having a sequence of 279 amino acids which shares 80% sequence identity with the EOS protease amino acid sequence of SEQ ID NO:7 herein wherein a region between position 1 and position 228 of both protease amino acid sequences is 99.5% identical and diverges thereafter due to a relative insertion of 198 nucleic acids comprising a single-nucleotide insertion causing a shift of the reading frame, thus fails to encode a further array of 50 contiguous amino acids in the sequence of SEQ ID NO:7 herein. Xiao discloses a nucleic acid, SEQ ID NO:5, encoding a prostatic-like serine protease, SEQ ID NO:6, having a sequence of 272 amino acids which shares 94% sequence identity with the EOS protease amino acid sequence of SEQ ID NO:7 herein wherein two relative deletions – gaps – in the nucleotide sequence of Xiao prevents it from encoding the amino acid sequence arrays between positions 16 and 26, inclusive, and between positions 172 and 175, inclusive, in the sequence of SEQ ID NO:7 herein.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William W. Moore whose telephone number is 703.308.0583. The examiner can normally be reached between 9:00AM-5:30PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapura Achutamurthy can be reached at 703.308.3804. Further fax phone numbers for the organization where this application or proceeding is assigned are 703.308.4242 for regular communications and 703.308.0294 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0196.

A handwritten signature in cursive script, appearing to read "William W. Moore".

William W. Moore
July 9, 2003